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NOTE: Projects that involve cutting, sawing, sanding, scraping, needle gunning, abrasive blasting, high temperature removal, etc., of lead-based/lead-containing painted materials may result in lead exposures in excess of OSHA limits. Therefore, personal protective equipment should be used and controls implemented. Institute worker protection controls as indicated in 29 CFR 1926.62 and herein. Also, some work practices are prohibited for LBP/LBP hazard abatement (e.g., machine sanding, abrasive blasting) unless used with HEPA exhaust controls (see 40 CFR 745.227).

NOTE: In projects involving housing, it is strongly recommended that the specification editor have appropriate training regarding lead-based paint activities. Certification as a project designer per 40 CFR 745 is recommended.

NOTE: Drawings should indicate the location, extent and condition of the LBP/LCP to be removed. Clearly indicate if the LBP/LCP is to be removed to the substrate.

PART 1 GENERAL

1.1 REFERENCES

NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a RID outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

The publications listed below form a part of this specification to the extent referenced. The publications are referred within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z88.2	(1992) Respiratory Protection
ANSI Z9.2	(1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

HUD Guidelines	(1995) Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing
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U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1926.103	Respiratory Protection
29 CFR 1926.21	Safety Training and Education
29 CFR 1926.33	Access to Employee Exposure and Medical Records
29 CFR 1926.55	Gases, Vapors, Fumes, Dusts, and Mists
29 CFR 1926.59	Hazard Communication
29 CFR 1926.62	Lead
29 CFR 1926.65	Hazardous Waste Operations and Emergency Response
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 745	Lead; Requirements for Lead-Based Paint Activities
49 CFR 172	(2004) Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information and Training Requirements

UNDERWRITERS LABORATORIES (UL)

UL 586

(1996) High-Efficiency, Particulate, Air
Filter Units

1.2 DEFINITIONS

1.2.1 Action Level

Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8 hour period in an occupational/industrial environment.

1.2.2 Area Sampling

Sampling of lead concentrations within the lead control area and inside the physical boundaries which is representative of the airborne lead concentrations but is not collected in the breathing zone of personnel.

1.2.3 Competent Person (CP)

As used in this section, refers to a person employed by the Contractor who is trained in the recognition and control of lead hazards in accordance with current federal, State, and local regulations. An industrial hygienist or safety professional certified for comprehensive practice by the American Board of Industrial Hygiene or by the Board of Certified Safety Professionals is the best choice.

1.2.4 Contaminated Room

Room for removal of contaminated personal protective equipment (PPE).

1.2.5 Decontamination Shower Facility

That facility that encompasses a clean clothing storage room, and a contaminated clothing storage and disposal rooms, with a shower facility in between.

1.2.6 Eight-Hour Time Weighted Average (TWA)

Airborne concentration of lead to which an employee is exposed, averaged over an 8 hour workday as indicated in 29 CFR 1926.62.

1.2.7 High Efficiency Particulate Air (HEPA) Filter Equipment

HEPA filtered vacuuming equipment with a UL 586 filter system capable of collecting and retaining lead-contaminated paint dust. A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron or larger size particles.

1.2.8 Lead

Metallic lead, inorganic lead compounds, and organic lead soaps.

1.2.9 Lead-Based Paint (LBP)

Paint or other surface coating that contains lead in excess of 1.0 milligrams per centimeter squared or 0.5 percent by weight.

1.2.10 Lead-Based Paint Hazard (LBP Hazard)

Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-based paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects.

1.2.11 Lead-Containing Paint (LCP)

Lead-based paint or other similar surface coating containing lead or lead compound in excess of 0.06 percent by weight of the total nonvolatile content of the paint.

1.2.12 Lead Control Area

An enclosed area or structure, constructed as a temporary containment equipped with HEPA filtered local exhaust, which prevents the spread of lead dust, paint chips, or debris existing as a condition of lead-based paint removal operations. The lead control area is also isolated by physical boundaries to prevent unauthorized entry of personnel.

1.2.13 Lead Permissible Exposure Limit (PEL)

Fifty micrograms per cubic meter of air as an 8 hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed for more than eight hours in a work day, the PEL shall be determined by the following formula:

$$\text{PEL (micrograms/cubic meter of air)} = 400/\text{No. hrs worked per day}$$

1.2.14 Personal Sampling

Sampling of airborne lead concentrations within the breathing zone of an employee to determine the 8 hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employees' work tasks. Breathing zone shall be considered an area within a hemisphere, forward of the shoulders, with a radius of 150 to 225 mm 6 to 9 inches and centered at the nose or mouth of an employee.

1.2.15 Physical Boundary

Area physically roped or partitioned off around an enclosed lead control area to limit unauthorized entry of personnel. As used in this section, "inside boundary" shall mean the same as "outside lead control area but inside boundary."

1.3 DESCRIPTION OF WORK

NOTE: Specify the location (doors, windows, walls, ceilings, floors, piping or building materials), extent (specific surfaces or components) and condition (intact, flaking, chalking, alligatored, chipped, peeling) of the LBP/LCP to be removed or

disturbed.

Remove lead-based / lead-containing paint in [_____] condition, located [_____] and as indicated on the drawings.

1.4 SUBMITTALS

NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control. Include a columnar list of appropriate products and tests beneath each submittal description.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy, Air Force, and NASA projects.

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES in sufficient detail to show full compliance with the specification.

SD-03 Product Data

Vacuum filters; G

Respirators; G

SD-06 Test Reports

Sampling results; G

Assessment data report; G

SD-07 Certificates

Qualifications of CP; G

Testing laboratory qualifications; G

NOTE: Refer to Criteria Notes in paragraphs titled
"Air and Wipe Sampling" and "Clearance
Certification" to determine whether this item should
be included in the project.

Third party consultant qualifications; G

Lead-Based Paint/Lead-Containing Paint Removal Plan including CP
approval (signature, date, and certification number); G

Rental equipment notification; G

Respiratory protection program; G

Hazard communication program; G

EPA approved hazardous waste treatment or disposal facility for
lead disposal; G

Hazardous waste management plan; G

Vacuum filters; G

SD-08 Manufacturer's Instructions

Chemicals and equipment; G

Materials; G

Material safety data sheets for all chemicals; G

SD-11 Closeout Submittals

Completed and signed hazardous waste manifest from treatment or
disposal facility; G

Certification of medical examinations; G

Employee training certification; G

1.5 QUALIFICATIONS OF CP

Submit name, address, and telephone number of the CP selected to perform responsibilities specified in paragraph entitled "Competent Person (CP) Responsibilities." Provide previous experience of the CP. Submit proper documentation that the CP is trained [and licensed] [and certified] in accordance with Federal, State, and local laws.

[1.6 THIRD PARTY CONSULTANT QUALIFICATIONS

NOTE: Refer to Criteria Notes in paragraphs titled
"Air and Wipe Sampling" and "Clearance
Certification" to determine whether this paragraph
should be included in the project.

Submit the name, address, and telephone number of the third party consultant selected to perform the wipe sampling for determining concentrations of lead in dust or soil sampling. Submit proper documentation that the consultant is trained and certified as an inspector technician or inspector/risk assessor by the USEPA authorized State (or local) certification and accreditation program.

]1.7 TESTING LABORATORY

Submit the name, address, and telephone number of the testing laboratory selected to perform the air [and wipe] [and soil] sampling, testing, and reporting of airborne concentrations of lead. Use a laboratory accredited under the EPA National Lead Laboratory Accreditation Program (NLLAP) by either the American Association for Laboratory Accreditation (A2LA) or the American Industrial Hygiene Association (AIHA) and that is successfully participating in the Environmental Lead Proficiency Analytical Testing (ELPAT) program to perform sample analysis.

1.8 LEAD-BASED PAINT/LEAD-CONTAINING PAINT REMOVAL PLANLBP/LCPRP)

Submit a detailed job-specific plan of the work procedures to be used in the removal of LBP/LCP. The plan shall include a sketch showing the location, size, and details of lead control areas, location and details of decontamination facilities, viewing ports, and mechanical ventilation system. Include in the plan, eating, drinking, smoking and sanitary procedures, interface of trades, sequencing of lead related work, collected waste water and paint debris disposal plan, air sampling plan, respirators, personal protective equipment, and a detailed description of the method of containment of the operation to ensure that airborne lead concentrations of 30 micrograms per cubic meter of air [and baseline lead dust/soil concentrations] are not reached or exceeded outside of the lead control area. Include site preparation and cleanup procedures. Include occupational and environmental sampling, training and strategy, sampling methodology, frequency, duration of sampling, and qualifications of sampling personnel in the air sampling portion of the plan.

1.9 OCCUPATIONAL AND ENVIRONMENTAL SAMPLING RESULTS

Submit occupational and environmental sampling results to the Contracting Officer within three working days of collection, signed by the testing laboratory responsible official, the employee that performed the sampling, and the CP.

- a. The sampling results shall represent each job classification, or if working conditions are similar to previous jobs by the same employer, provide previously collected exposure data that can be used to estimate worker exposures in accordance with 29 CFR 1926.62. The data shall represent the worker's regular daily exposure to lead.

- b. Submit worker exposure data conducted during the task based trigger operations of 29 CFR 1926.62.
- c. The initial monitoring shall determine the requirements for further monitoring and the need to fully implement the control and protective requirements including the compliance program (LBP/LCP) in accordance with 29 CFR 1926.62.

1.10 OCCUPATIONAL AND ENVIRONMENTAL ASSESSMENT DATA REPORT

Some LBP/LCP removal work may not require full implementation of the requirements of 29 CFR 1926.62. Based on the experience of the Contractor and/or the use of a specific process or method for performing the work, the Contractor may be able to provide historic data (previous 12 months) to demonstrate that airborne exposures are controlled below the action level. Such methods or controls shall be fully presented in the LBP/LCPRP. To reduce the full implementation of 29 CFR 1926.62, the Contractor shall provide documentation in an Assessment Data Report.

Submit occupational and environmental assessment report to the Contracting Officer prior to start of work, signed by the testing laboratory responsible official, and the CP.

- a. Submit a report that supports the determination regarding the reduction of the need to fully implement the requirements of 29 CFR 1926.62 and supporting the LBP/LCP. The exposure assessment shall represent each job classification, or if working conditions are similar to previous jobs by the same employer, provide previously collected exposure data that can be used to estimate worker exposures in accordance with 29 CFR 1926.62. The data shall represent the worker's regular daily exposure to lead for stated work.
- b. Submit worker exposure data conducted during the task based trigger operations of 29 CFR 1926.62 with a complete process description in supporting a negative assessment.
- c. The initial assessment shall determine the requirement for further monitoring and the need to fully implement the control and protective requirements including the compliance program (LBP/LCPRP) in accordance with 29 CFR 1926.62.

1.11 QUALITY ASSURANCE

1.11.1 Medical Examinations

Initial medical surveillance as required by 29 CFR 1926.62 shall be made available to all employees exposed to lead at any time (1 day) above the action level. Full medical surveillance shall be made available to all employees on an annual basis who are or may be exposed to lead in excess of the action level for more than 30 days a year or as required by 29 CFR 1926.62. Adequate records shall show that employees meet the medical surveillance requirements of 29 CFR 1926.33, 29 CFR 1926.62, and 29 CFR 1926.103.

1.11.1.1 Medical Records

Maintain complete and accurate medical records of employees for a period of at least 30 years or for the duration of employment plus 30 years,

whichever is longer.

1.11.1.2 Medical Surveillance

Provide medical surveillance to all personnel exposed to lead as indicated in 29 CFR 1926.62.

1.11.2 Competent Person (CP) Responsibilities

- a. Certify training as meeting all federal, State, and local requirements.
- b. Review and approve lead-based paint/lead-containing paint removal plan for conformance to the applicable referenced standards.
- c. Continuously inspect lead-based paint removal work for conformance with the approved plan.
- d. Perform air and wipe sampling.
- e. Ensure work is performed in strict accordance with specifications at all times.
- f. Control work to prevent hazardous exposure to human beings and to the environment at all times.
- g. Certify the conditions of the work as called for elsewhere in this specification.

1.11.3 Training

Train each employee performing paint removal, disposal, and air sampling operations prior to the time of initial job assignment and annually thereafter, in accordance with 29 CFR 1926.21, 29 CFR 1926.62, and State and local regulations.

1.11.3.1 Training Certification

NOTE: State or local regulations may consider LBP/LCP removal work as "lead-based paint hazard reduction activities" or "deleading." The training provider may be required to be "accredited" by either the State or the United States Environmental Protection Agency (USEPA).

Submit a certificate for each employee, signed and dated by the approved training source, stating that the employee has received the required lead training.

1.11.4 Respiratory Protection Program

- a. Furnish each employee required to wear a negative pressure respirator or other appropriate type with a respirator fit test at the time of initial fitting and at least annually thereafter as required by 29 CFR 1926.62.
- b. Establish and implement a respiratory protection program as

required by ANSI Z88.2, 29 CFR 1926.103, 29 CFR 1926.62, and 29 CFR 1926.55.

1.11.5 Hazard Communication Program

Establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

1.11.6 Hazardous Waste Management

The Hazardous Waste Management Plan shall comply with applicable requirements of federal, State, and local hazardous waste regulations and address:

- a. Identification and classification of hazardous wastes associated with the work.
- b. Estimated quantities of wastes to be generated and disposed of.
- c. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location [and operator] and a 24-hour point of contact. Furnish two copies of [EPA] [State] [and] [local] hazardous waste [permit applications] [permits] [manifests] [and] [EPA Identification numbers].
- d. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.
- e. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.
- f. Spill prevention, containment, and cleanup contingency measures including a health and safety plan to be implemented in accordance with 29 CFR 1926.65.
- g. Work plan and schedule for waste containment, removal and disposal. Wastes shall be cleaned up and containerized daily.
- h. Unit cost for hazardous waste disposal according to this plan.

1.11.7 Environmental, Safety and Health Compliance

NOTE: Include applicable State, regional, and local laws, regulations, and statutes. Do careful research since not all State and local laws apply to Federal installations. Verify with the State or local authorities whether the city, county, State, and/or the USEPA has jurisdiction and whether licensing and/or certification is required. Also identify the authority or code sponsor and the laws, regulations, and statutes cited under paragraph titled "References" using complete title and number.

In addition to the detailed requirements of this specification, comply with laws, ordinances, rules, and regulations of Federal, State, and local

authorities regarding removing, handling, storing, transporting, and disposing of lead waste materials. Comply with the applicable requirements of the current issue of 29 CFR 1926.62. Submit matters regarding interpretation of standards to the Contracting Officer for resolution before starting work. Where specification requirements and the referenced documents vary, the most stringent requirement shall apply. [The following [local] [and] [State] laws, ordinances, criteria, rules and regulations regarding removing, handling, storing, transporting, and disposing of lead-contaminated materials apply:

- a. [_____]
- b. [_____]
- c. [_____]

[[Licensing] [and certification] in the State of [_____] is required.]

1.11.8 Pre-Construction Conference

Along with the CP, meet with the Contracting Officer to discuss in detail the hazardous waste management plan and the lead-based paint/lead-containing paint removal plan, including work procedures and precautions for the removal plan.

1.12 EQUIPMENT

1.12.1 Respirators

Furnish appropriate respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for use in atmospheres containing lead dust. Respirators shall comply with the requirements of 29 CFR 1926.62.

1.12.2 Special Protective Clothing

Furnish personnel who will be exposed to lead-contaminated dust with proper disposable [uncontaminated, reusable] protective whole body clothing, head covering, gloves, and foot coverings as required by 29 CFR 1926.62. Furnish proper disposable plastic or rubber gloves to protect hands. Reduce the level of protection only after obtaining approval from the CP.

1.12.3 Rental Equipment Notification

If rental equipment is to be used during lead-based paint handling and disposal, notify the rental agency in writing concerning the intended use of the equipment. Furnish a copy of the written notification to the Contracting Officer.

1.12.4 Vacuum Filters

UL 586 labeled HEPA filters.

1.12.5 Equipment for Government Personnel

NOTE: Verify the number of sets required with
OICC/ROICC.

Furnish the Contracting Officer with [two] [_____] complete sets of personal protective equipment (PPE) daily, as required herein, for entry into and inspection of the paint removal work within the lead controlled area. Personal protective equipment shall include disposable whole body covering, including appropriate foot, head, and hand protection. PPE shall remain the property of the Contractor. Respiratory protection for the Contracting Officer will be provided by the Government.

1.13 REMOVAL

1.13.1 Title to Materials

Materials resulting from demolition work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of in accordance with Section 02 41 00.00 99 DEMOLITION except as specified herein.

PART 2 PRODUCTS

2.1 CHEMICALS

Submit applicable [Material Safety Data Sheets](#) for all chemicals used in paint removal work. Use the least toxic product approved by the Contracting Officer.

2.2 MATERIALS

The soluble metal content and the total metal content shall not exceed values which would cause a material to be classified as a hazardous waste.

PART 3 EXECUTION

3.1 PROTECTION

3.1.1 Notification

Notify the Contracting Officer [20] [_____] days prior to the start of any paint removal work.

3.1.2 Lead Control Area Requirements

NOTE: Choose the first paragraph if LBP will be removed by means which will not likely create airborne, lead-containing dust (such as careful wet scraping or chemical stripping). Choose the second paragraph if removal practice will create airborne, lead-containing dust (such as sanding, abrasive blasting, thermal cutting, demolition, or needle gun use).

[Establish a lead control area by situating critical barriers and physical boundaries around the area or structure where LBP/LCP removal operations will be performed.]

NOTE: The Designer should consider the use of

viewing ports for lead control areas under 100 square meters 1,000 square feet to save inspection time.

NOTE: Select the control method that will ensure efficiency and airborne lead levels below the action level of 30 ug/m3 outside of the lead control area.

[Full containment - Contain removal operations by the use of [critical barriers] [and HEPA filtered exhaust] [a negative pressure enclosure system with decontamination facilities and with HEPA filtered exhaust if required by the CP]. For containment areas larger than 100 square meters 1,000 square feet install a minimum of two 450 mm 18 inch square viewing ports. Locate ports to provide a view of the required work from the exterior of the enclosed contaminated area. Glaze ports with laminated safety glass.]

3.1.3 Protection of Existing Work to Remain

Perform paint removal work without damage or contamination of adjacent areas. Where existing work is damaged or contaminated, restore work to its original condition or better.

3.1.4 Boundary Requirements

Provide physical boundaries around the lead control area by roping off the area designated in the work plan or providing curtains, portable partitions or other enclosures to ensure that airborne concentrations of lead will not reach 30 micrograms per cubic meter of air outside of the lead control area.

3.1.4.1 Physical Boundary

Provide physical boundaries around the lead control area by roping off the area designated in the work plan or providing curtains, portable partitions or other enclosures to ensure that airborne concentrations of lead will not reach 30 micrograms per cubic meter of air outside of the lead control area.

3.1.4.2 Warning Signs

Provide warning signs at approaches to lead control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs shall comply with the requirements of 29 CFR 1926.62.

3.1.5 Furnishings

NOTE: Verify with the activity furniture/equipment requirements.

[The Government will remove furniture and equipment from the building before lead-based paint removal work begins.]

[Furniture [_____] and equipment will remain in the building. Protect and cover furnishings or remove furnishings from the work area and store in a location approved by the Contracting Officer.]

[Existing [furniture] [and] [equipment] is lead contaminated,
[decontaminate] [dispose of as lead contaminated waste].]

3.1.6 Heating, Ventilating and Air Conditioning (HVAC) Systems

Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the lead control areas. Seal intake and exhaust vents in the lead control area with 0.15 mm 6 mil plastic sheet and tape. Seal seams in HVAC components that pass through the lead control area. [Provide temporary HVAC system for areas in which HVAC has been shut down outside the lead control area.]

3.1.7 Decontamination Shower Facility

Provide clean and contaminated change rooms and shower facilities in accordance with this specification and 29 CFR 1926.62.

3.1.8 Eye Wash Station

Where eyes may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes shall be provided within the work area.

3.1.9 Mechanical Ventilation System

- a. Use adequate ventilation to control personnel exposure to lead in accordance with 29 CFR 1926.62.
- b. To the extent feasible, use fixed local exhaust ventilation connected to HEPA filters or other collection systems, approved by the CP. Local exhaust ventilation systems shall be designed, constructed, installed, and maintained in accordance with ANSI Z9.2.
- c. Vent local exhaust outside the building only and away from building ventilation intakes.
- d. Use locally exhausted, power actuated, paint removal tools.

3.1.10 Personnel Protection

Personnel shall wear and use protective clothing and equipment as specified herein. Eating, smoking, or drinking or application of cosmetics is not permitted in the lead control area. No one will be permitted in the lead control area unless they have been appropriately trained and provided with protective equipment.

3.2 WORK PROCEDURES

Perform removal of lead-based paint in accordance with approved lead-based paint/lead-containing paint removal plan. Use procedures and equipment required to limit occupational and environmental exposure to lead when lead-based paint is removed in accordance with 29 CFR 1926.62, except as specified herein. Dispose of removed paint chips and associated waste in compliance with Environmental Protection Agency (EPA), federal, State, and local requirements.

3.2.1 Personnel Exiting Procedures

Whenever personnel exit the lead-controlled area, they shall perform the following procedures and shall not leave the work place wearing any clothing or equipment worn during the work day:

- a. Vacuum themselves off.
- b. Remove protective clothing in the contaminated change room, and place them in an approved impermeable disposal bag.

NOTE: Showering is the preferred method of personal decontamination. However, extenuating circumstances may prevent the use of a shower at the work site.

- [c. Shower.]
- [c. Wash hands and face at the site, don appropriate disposable or uncontaminated reusable clothing; move to an appropriate facility; shower.]
- d. Change to clean clothes prior to leaving the physical boundary designated around the lead control area.

3.2.2 Air and Wipe Sampling

Air sample for lead in accordance with 29 CFR 1926.62 and as specified herein. Air and wipe sampling shall be directed or performed by the CP.

- a. The CP shall be on the job site directing the air and non-clearance wipe sampling and inspecting the lead-based paint removal work to ensure that the requirements of the contract have been satisfied during the entire lead-based paint removal operation.
- b. Collect personal air samples on employees who are anticipated to have the greatest risk of exposure as determined by the CP. In addition, collect air samples on at least 25 percent of the work crew or a minimum of two employees, whichever is greater, during each work shift.
- c. Submit results of air samples, signed by the CP, within 72 hours after the air samples are taken. Notify the Contracting Officer immediately of exposure to lead at or in excess of the action level of 30 micrograms per cubic meter of air outside of the lead control area.

NOTE: Include the following paragraph for high profile, sensitive work such as present in family housing, child care facilities, administrative buildings, kitchens, barracks, etc. Use the following paragraph along with clearance certification by a third party consultant specified in paragraph titled "Clearance Certification" to determine if significant contamination was due to the contract work.

Surface dust sampling to determine clearance (i.e., that the work has not contaminated surfaces within and adjacent to the control area) should be performed by a third party to reduce a conflict of interest. Samples must be conducted by an individual not paid or employed or otherwise compensated by the LBP/LCP removal Contractor. State or local regulations may require third party testing if the LBP/LCP removal operation is considered a lead hazard reduction activity.

- d. Before any work begins, collect and analyze baseline [or soil] wipe samples in accordance with methods defined in federal, State, and local standards inside and outside of the physical boundary to assess the degree of dust contamination in the facility prior to lead-based paint removal.

3.2.2.1 Air Sampling During Paint Removal Work

Conduct area air sampling daily, on each shift in which lead-based paint removal operations are performed, in areas immediately adjacent to the lead control area. Sufficient area monitoring shall be conducted to ensure unprotected personnel are not exposed at or above 30 micrograms per cubic meter of air. If 30 micrograms per cubic meter of air is reached or exceeded, stop work, correct the condition(s) causing the increased levels. Notify the Contracting Officer immediately. Determine if condition(s) require any further change in work methods. Removal work shall resume only after approval is given by the CP and the Contracting Officer. For outdoor operations, at least one sample on each shift shall be taken on the downwind side of the lead control area.

3.2.3 Lead-Based Paint Removal

NOTE: Use bracketed prohibition on manual and power sanding when appropriate. Large scale manual or power sanding of painted surfaces should never be allowed in family housing, administrative buildings, galleys, barracks, etc., due to problems associated with the resulting dust fallout/contamination of crevices and cracks which may retain unseen quantities of lead-contaminated dust. Use of this type of removal technique for exteriors of the aforementioned facility types should be extremely limited, because the resulting airborne dust could result in significant contamination of the ground in the immediate vicinity of the facility. Manual or power sanding of interior and exterior surfaces may be an acceptable work method only if appropriate control for personnel/environmental protection are in place.

[Manual or power sanding of interior and exterior surfaces is not permitted.] Provide methodology for removing LBP in work plan. Remove paint within the areas designated on the drawings in order to completely expose the substrate. Take whatever precautions necessary to minimize

damage to the underlying substrate.

[Avoid [flash rusting][deterioration] of the substrate. Provide surface preparations for painting in accord with Section 09 90 00.00 99 PAINTING AND COATING.]

NOTE: Listed below are various types of paint removal techniques. Designer may be required to specify a particular technique in order to limit potential conflicts or problems.

1. Wood, Drywall, Interior Partitions

- a. Scraping
- b. Heat Stripping
- c. Chemical Stripping
- d. Power Tool Cleaning (least acceptable)
- e. Wet Abrasive Blasting

Chemical stripping should be carefully researched as a removal method for soft wood (e.g., pine or redwood) substrates. The wrong chemical strippers can increase the risk of residual lead contamination in the substrate.

2. Steel and Metal Surfaces (Industrial)

- a. Power/Hand Tool Cleaning (least acceptable)
- b. Dry Abrasive Blast with Water Ring (Wet "Halo")
- c. Wet Abrasive Blast
- d. Low Volume High Pressure Water Blast
- e. Chemical Stripping
- f. Vacuum Blast

The following practices are restricted during lead hazard abatement work on housing per 40 CFR 745: Open flame burning or torching is prohibited; machine sanding or grinding or abrasive blasting on LBP is prohibited unless used with High Efficiency Particulate Air (HEPA) exhaust control; dry scraping in conjunction with heat guns, or around electrical outlets, is permitted if limited to no more than 2 square feet in any one room (20 square feet on exterior surfaces); heat guns must operate at temperatures below 1100 degrees Fahrenheit.

Provide methodology for removing LBP/LCP removal processes to minimize contamination of work areas outside the control area with lead-contaminated dust or other lead-contaminated debris/waste and to ensure that unprotected personnel are not exposed to hazardous concentrations of lead. Describe this LBP/LCP removal process in the LBP/LCPRP.

3.2.3.1 Indoor Lead Paint Removal

Perform [manual][mechanical][thermal][chemical] paint removal in lead control areas using enclosures, barriers, or containments [and powered locally exhausted paint removal tools]. Collect residue [debris] for

disposal in accordance with federal, State, and local requirements.

3.2.3.2 Outdoor Lead Paint Removal

Perform outdoor removal as indicated in federal, State, and local regulations and in the LBP/CPRP. The worksite preparation (barriers or containments) shall be job dependent and presented in the LBP/LCPRP.

3.2.3.3 Sampling After Paint Removal

After the visual inspection, [conduct soil sampling if bare soil is present during external removal operations and] collect air samples inside and outside the lead control area to determine the airborne levels of lead inside and outside the work area. Collect wipe samples according to the HUD protocol contained in **HUD Guidelines** to determine the lead content of settled dust and dirt in micrograms per square meter foot of surface area [and parts per million (ppm) or micrograms per gram (ug/g) for soil].

3.2.4 Cleanup and Disposal

3.2.4.1 Cleanup

Maintain surfaces of the lead control area free of accumulations of paint chips and dust. Restrict the spread of dust and debris; keep waste from being distributed over the work area. Do not dry sweep or use compressed air to clean up the area. At the end of each shift and when the paint removal operation has been completed, clean the area of visible lead paint contamination by vacuuming with a HEPA filtered vacuum cleaner, wet mopping the area and wet wiping the area as indicated by the CP. Reclean areas showing dust or residual paint chips or debris. After visible dust, chips and debris is removed, wet wipe and HEPA vacuum all surfaces in the work area. If adjacent areas become contaminated at any time during the work, clean, visually inspect, and then wipe sample all contaminated areas. The CP shall then certify in writing that the area has been cleaned of lead contamination before restarting work.

3.2.4.2 Clearance Certification

NOTE: The second paragraph must be used for high profile, sensitive work such as present in family housing, child care facilities, administrative buildings, kitchens, barracks, etc., or the conversion of industrial lead work areas (e.g., firing ranges) into non-industrial work areas open for public access, otherwise delete. Surface dust sampling to determine clearance (i.e., that the work has not contaminated surfaces within and adjacent to the control area) should be performed by a third party to reduce a conflict of interest.

The CP shall certify in writing that the final air samples collected inside and outside the lead control area are less than 30 micrograms per cubic meter of air; the respiratory protection used for the employees was adequate; the work procedures were performed in accordance with **29 CFR 1926.62** and **40 CFR 745**; and that there were no visible accumulations of material and dust containing lead left in the work site. Do not remove the lead control area or roped off boundary and warning signs prior to the

Contracting Officer's acknowledgement of receipt of the CP certification.

[A third party consultant shall certify surface wipe sample results collected inside and outside the work area are [less than 100 micrograms per 0.1 square meter square foot on uncarpeted floors, less than 500 micrograms per 0.1 square meter square foot on interior window sills and less than 800 micrograms per 0.1 square meter square foot on window troughs] [not significantly greater than the initial surface loading determined prior to work].]

[For exterior paint removal work, soil samples taken at the exterior of the work site shall be used to determine if soil lead levels had increased at a statistically significant level (significant at the 95 percent confidence limit) from the soil lead levels prior to the work. If soil lead levels do show a statistically significant increase above any applicable Federal or State standard for lead in soil, the soil shall be remediated back to the pre-work level.].

[3.2.4.3 Testing of Lead-Based Paint Residue and Used Abrasive

NOTE: Include this paragraph when the lead content
of the residue is questionable, otherwise delete.

Test paint residue and used abrasive in accordance with 40 CFR 261 for hazardous waste.]

3.2.4.4 Disposal

NOTE: Federal regulations (40 CFR 260-265) require
a U.S. EPA generator identification number for use
on the Uniform Hazardous Waste Manifest prior to
commencement of removal work.

NOTE: Amend text to reflect State, regional, and
local laws, regulations, and statutes.

NOTE: Proper segregation and handling of waste can
significantly reduce the generated volume (and cost)
of disposing hazardous wastes.

NOTE: Amend text to reflect State, regional, and
local requirements regarding the recycling of lead
wastes. The entire waste stream or discrete
portions of the waste may be appropriately packaged
and transported for recycling.

- a. Collect lead-contaminated waste, scrap, debris, bags, containers, equipment, and lead-contaminated clothing which may produce airborne concentrations of lead particles. Label the containers

in accordance with 29 CFR 1926.62 and 40 CFR 261. Dispose of lead-contaminated waste material at an [EPA] [or] [State] approved hazardous waste treatment, storage, or disposal facility off Government property.

- b. Store waste materials in U.S. Department of Transportation (49 CFR 178) approved 208 liter 55 gallon drums. Properly label each drum to identify the type of waste (49 CFR 172) and the date the drum was filled. The Contracting Officer or an authorized representative will assign an area for interim storage of waste-containing drums. Do not store hazardous waste drums in interim storage longer than 90 calendar days from the date affixed to each drum.
- c. Handle, store, transport, and dispose lead or lead-contaminated waste in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, and 40 CFR 265. Comply with land disposal restriction notification requirements as required by 40 CFR 268.
- d. All material, whether hazardous or non-hazardous shall be disposed in accordance with laws and provisions and Federal, State, or local regulations. Ensure waste is properly characterized. The result of each waste characterization (TCLP for RCRA materials) will dictate disposal requirements.

3.2.5 Disposal Documentation

NOTE: Include the following paragraph if the Contractor is to dispose of hazardous waste.

Submit written evidence that the hazardous waste treatment, storage, or disposal facility (TSD) is approved for lead disposal by the EPA and State or local regulatory agencies. Submit one copy of the completed manifest, signed and dated by the initial transporter in accordance with 40 CFR 262.

3.2.6 Payment for Hazardous Waste

Payment for disposal of hazardous waste will not be made until a signed copy of the manifest from the treatment or disposal facility certifying the amount of lead-containing materials delivered is returned and a copy is furnished to the Government.

-- End of Section --